

**Notice of Allowability**

Application No.

10/586,373

Examiner

Russ Guill

Applicant(s)

DEFFENBAUGH ET AL.

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an Amendment filed October 19, 2007.
2. ☒ The allowed claim(s) is/are 1-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### DETAILED ACTION

1. This Office Action is in response to an Amendment filed October 19, 2007. Claims 24 - 26 were added. No claims were canceled. Claims 1 - 26 are pending. Claims 1 - 26 have been examined. Claims 1 - 26 are allowed over the prior art of record.
2. The Examiner would like to thank the Applicant for the well-presented response, especially the recitation of support for the claim amendments, which was useful in the examination process. The Examiner appreciates the effort to carefully analyze the Office Action, and make appropriate arguments and amendments.

### *Allowable Subject Matter*

3. Claims 1 - 26 are allowed over the prior art of record.
4. Following is an Examiner's statement of reasons for allowance:
  - a. Regarding claim 1, while SyvitskiDelta (Syvitski et al., "Delta2: Delta progradation and basin filling", 1992) teaches determining an outline of a composite sedimentary body, and SyvitskiSedFlux (Syvitski et al., "2D SEDFLUX 1.0C: an advanced process-response numerical model for the fill of marine sedimentary basins", 2001) teaches characterizing properties of a composite sedimentary body, and Swanson (U.S. Patent Number 4,821,164) teaches constructing a geologic model of a hydrocarbon reservoir in a subsurface region, the model being based on fundamental bodies, and using the geologic model to plan or predict hydrocarbon volumes or production rates of the reservoir, none of these references taken alone or in combination with the prior art of record teaches a method for constructing a geologic model of a

hydrocarbon reservoir in a subsurface region and using the model to plan development or predict hydrocarbon volumes or production rates of the reservoir, specifically including: "simulating generation of a fundamental body based on the characterized properties of fundamental bodies, wherein the fundamental body grows until it becomes large enough to divert the sediment-laden flow that creates it", "placing the fundamental body into the outline of the composite sedimentary body", "repeating steps (c) through (d) one or more times until the outline of the composite sedimentary body contains a plurality of fundamental bodies", in combination with the remaining features and elements of the claimed invention. It is for these reasons that the Applicant's invention defines over the prior art of record.

b. Regarding **claim 10**, while SyvitskiDelta (Syvitski et al., "Delta2: Delta progradation and basin filling", 1992) teaches determining an outline of a composite sedimentary body, and SyvitskiSedFlux (Syvitski et al., "2D SEDFLUX 1.0C: an advanced process-response numerical model for the fill of marine sedimentary basins", 2001) teaches determining properties of a composite sedimentary body, and Swanson (U.S. Patent Number 4,821,164) teaches constructing a geologic model of a hydrocarbon reservoir in a subsurface region, the model being based on fundamental bodies, and using the geologic model to plan or predict hydrocarbon volumes or production rates of the reservoir, none of these references taken alone or in combination with the prior art of record teaches a method for constructing a geologic model of a hydrocarbon reservoir in a subsurface region and using the model to plan development or predict hydrocarbon volumes or production rates of the reservoir, specifically including: "determining properties of at least one identified fundamental body within the composite sedimentary body", "characterizing the properties of fundamental

bodies in the composite sedimentary body", "simulating generation of another fundamental body to be placed in the outline of the composite sedimentary body", "placing the other fundamental body into the outline of the composite sedimentary body", "repeating steps (e) through (f) until the outline of the composite sedimentary body contains a plurality of fundamental bodies", in combination with the remaining features and elements of the claimed invention. It is for these reasons that the Applicant's invention defines over the prior art of record.

c. Regarding claim 17, while SyvitskiDelta (Syvitski et al., "Delta2: Delta progradation and basin filling", 1992) teaches determining an outline of a composite sedimentary body, and SyvitskiSedFlux (Syvitski et al., "2D SEDFLUX 1.0C: an advanced process-response numerical model for the fill of marine sedimentary basins", 2001) teaches measuring thickness and grain size distribution at one point in a fundamental body within the outline of a composite sedimentary body, determining properties of a fundamental body within a composite sedimentary body from a point measurement of thickness and grain size distribution within a fundamental body, and Swanson (U.S. Patent Number 4,821,164) teaches constructing a geologic model of a hydrocarbon reservoir in a subsurface region, the model being based on fundamental bodies, and using the geologic model to plan or predict hydrocarbon volumes or production rates of the reservoir, none of these references taken alone or in combination with the prior art of record teaches a method for constructing a geologic model of a hydrocarbon reservoir in a subsurface region and using the model to plan development or predict hydrocarbon volumes or production rates of the reservoir, specifically including: "characterizing properties of fundamental bodies in the composite sedimentary body", "simulating generation of another

fundamental body to be placed in the outline of the composite sedimentary body", "placing the other fundamental body into the outline of the composite sedimentary body", "repeating steps (e) through (f) until the outline of the composite sedimentary body contains a plurality of fundamental bodies", in combination with the remaining features and elements of the claimed invention. It is for these reasons that the Applicant's invention defines over the prior art of record.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russ Guill whose telephone number is 571-272-7955.

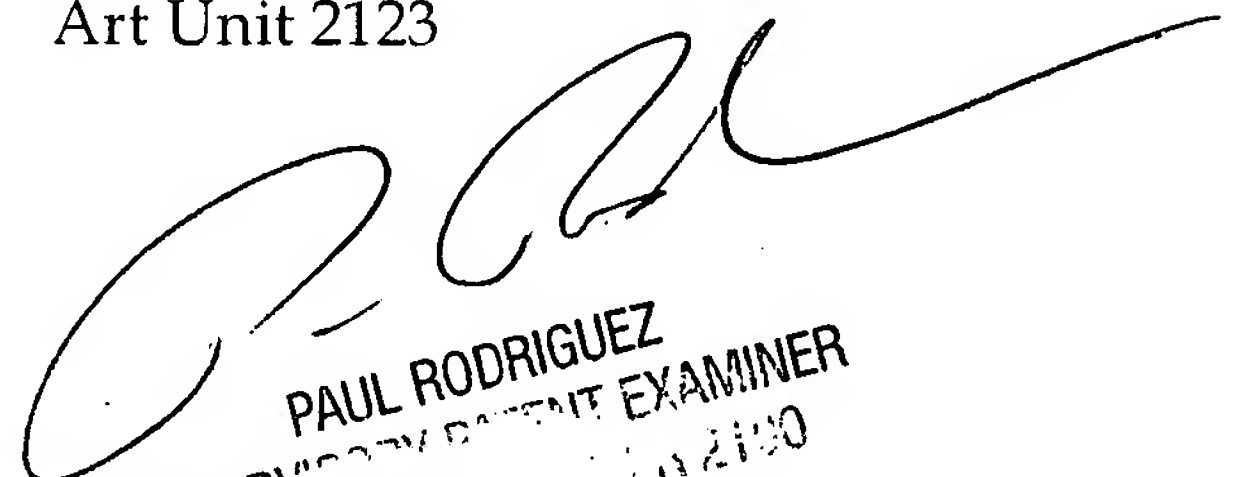
The examiner can normally be reached on Monday - Friday 9:30 AM - 6:00 PM.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group Receptionist: 571-272-2100.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RG

Russ Guill  
Examiner  
Art Unit 2123

  
PAUL RODRIGUEZ  
SUPERVISOR/EXAMINER  
TECHNOLOGY CENTER 2100